

ART. IX. THE CHAIN SNAKE, *LAMPROPELTIS GETULUS GETULUS* (L.), IN WEST VIRGINIA AND PENNSYLVANIA\*

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The Carnegie Museum recently received a Chain Snake from West Virginia which appears to be the first of its species from the state to reach a museum collection. This donation has stimulated me to consider the distribution of this snake in the northern half of its range, and its habitat preferences.

In the summer of 1931, I had the pleasure of spending a week in Pocahontas County, W. Va., as a member of the staff of the Oglebay Nature Training School. Many of my students proved to be excellent collectors and observers, and I have frequently had cause to be thankful for the friendships formed at this time, and renewed in later years, since many of these students have been most energetic in adding to the West Virginian collections of the Carnegie Museum. One of my students that year, and one of our most faithful contributors since then, Mr. Chester M. Shaffer, of Dorcas, W. Va., wrote to me, under date of May 15, 1932, as follows: "This afternoon I found a Chain king snake on the highway two miles north of Petersburg. It is the first one I have seen in West Virginia. The snake had just been killed by a passer-by. It was about 3 ft. in length, almost black with narrow white bands across the back about an inch or so apart. These bands widened to large white spots on the sides. The belly was largely white varying from white to yellowish white spotted." This description, and Mr. Shaffer's familiarity with the species in Florida, led me to accept his statement as the first valid report of the occurrence of *Lampropeltis getulus getulus* (L.) in West Virginia. Unfortunately, the specimen was not preserved.

\*I am especially indebted to Dr. Donald A. Cadzow, of the Pennsylvania Historical Commission, who sent me a print of the section of his film which showed a snake captured near Safe Harbor. I am also indebted to Mr. Neil D. Richmond, Dr. F. N. Blanchard, Mr. Roger Conant, Mr. W. Stuart Cramer, Dr. E. R. Dunn, Dr. George F. Johnson, and Mr. Carl F. Kauffeld, for pertinent information or assistance.

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More recently I learned from Mr. Neil D. Richmond, of Fairmont, W. Va., that a Chain Snake was secured in the South Branch Valley, near Franklin, Pendleton Co., W. Va., during 1931. This specimen was kept alive in the Biology Department of the State Teachers College at Fairmont until 1934, when it died and was discarded, at a time when Mr. Richmond was away. At Franklin, the South Branch of the Potomac River is at an altitude of about 1600 feet, and its valley is here rather narrow since it is hemmed in by mountain ridges.

Last October Mr. Shaffer donated to the Carnegie Museum a well-preserved Chain Snake which he found on Sept. 14, 1935 freshly killed on the highway two miles north of Petersburg, Grant Co., W. Va. This specimen (CM 8719) was found less than fifty yards from the place where he saw the 1932 specimen. Petersburg itself is in the South Branch Valley, but the point where the specimens were found is located at an elevation of about 950 feet in the broad valley of Lunice Creek, which empties into the South Branch at Petersburg.

The specimen has the lower jaw torn away, but except for this it is in excellent condition. It measures 1010 mm. in total length, which is probably less than was its length in life, since it is too tightly coiled to permit accurate measurement. Each character falls well within the limits of variation listed by Blanchard (1921: 55-58) for northern specimens of this species.

Surface (1906: 174) lists the Chain Snake as of possible occurrence in Pennsylvania, but states "we have not collected nor received specimens in the State." Surface's (Ibid: opp. 176) plate XXXI, which is labeled "Milk Snake or House Snake (*Lampropeltis doliatus triangulus*)," is obviously *L. getulus getulus*. It is improbable that this plate was based upon a Pennsylvanian specimen for the original photograph was made by Wm. H. Fisher, of Baltimore, and presumably represents a Maryland specimen. There is a distinct possibility, however, that Surface, failing to distinguish the two species, may have had specimens of both listed under *L. d. triangulus*. To the shame of the Commonwealth of Pennsylvania, Surface's valuable collections have been allowed to disintegrate completely in less than twenty-five years and, consequently, in questionable cases of this kind we can only indulge in idle speculation.

Last year Mr. W. Stuart Cramer, of the Philadelphia Zoological Garden, examined, at my request, certain specimens in the collection of the Franklin and Marshall College Museum, at Lancaster, Pa.

Mr. Cramer was formerly located at Lancaster, and he is familiar with collecting conditions in Lancaster County, and with the work of all of the recent collectors in that area. This knowledge enabled him to determine definitely that the only specimen of *L. g. getulus* in the Franklin and Marshall Museum actually came from just north of Port Deposit, Maryland (approximately eight miles south of the Pennsylvania line) even though it is erroneously labeled "Southern Lancaster County along the Susquehanna, May 25, 1929, Roy Palmer." In the absence of a preserved specimen, and in view of the fact that Dr. Roddy (1928: 41) reprinted Surface's plate without correcting the title, Dr. Roddy's (Ibid: 40) statement "This interesting snake of the Carolinian zone has been observed and taken several times in the Susquehanna Valley below the mouth of the Conestoga Creek" cannot be accepted as positive proof that the species occurs in Pennsylvania.

A few years ago, Dr. E. R. Dunn, of Haverford College, viewed a motion picture record of archaeological work in the vicinity of Safe Harbor, Lancaster Co., Pa., which had been directed by Dr. Donald A. Cadzow of the Pennsylvania Historical Commission. In one section of the picture a student was shown holding a large snake which the narrator described as having been secured in the vicinity. Dr. Dunn wrote me that the snake shown so fleetingly in the film appeared to be a Chain Snake. In recent correspondence Dr. Cadzow has informed me that the specimen photographed was found on Grubb Creek near Shenk's Ferry, about a mile and a half below the mouth of Conestoga Creek, Lancaster Co., Pa., in the summer of 1931, and that it was later released. Dr. Cadzow also sent me a print of the section of the 16 mm. film on which the snake occurs. I have had this bit of film enlarged, and I have also tried projecting it. In both instances, the grain prevented clear definition of the markings of the specimen. However, narrow bars are plainly visible in the enlargement and I am personally convinced that the specimen photographed was a Chain Snake. This evidence, although not conclusive, indicates that *L. g. getulus* should be tentatively included in the herpetofauna of Pennsylvania, even though there appears to be no preserved Pennsylvanian specimen in any collection.

Although there are numerous records of the occurrence of the species in Maryland, the Port Deposit specimen, referred to above, appears to be the only record for the Susquehanna Valley in this

state. There are several additional records for the Chesapeake drainage, and a number of records for the Potomac drainage, but I have not been able to secure any records for Maryland west of eastern Montgomery County.

When the distributional records of the Chain Snake are plotted on a map, it is at once apparent that this species is common in the large river valleys in the Coastal Plain and Piedmont Provinces of Virginia, but that the Blue Ridge Mountains have prevented it from spreading westward. However, the West Virginia records listed in this paper prove that this wall is penetrable at one spot where the Potomac Valley has served as a "gateway to the west." This evidence that the species has succeeded in passing the mountain barrier, and has extended its range as far as the South Branch Valley makes its absence in the Shenandoah Valley both surprising and questionable. I feel assured that the present lack of records for western Maryland and the Shenandoah will be corrected by more collecting in those areas. In Pennsylvania the species may eventually be found to be a rare inhabitant of the Potomac and lower Susquehanna drainage areas, from Bedford County east to Lancaster County.

Ditmars (1907: 362) describes the habitat of the Chain Snake as follows: "Specimens captured by the writer were in rather dry patches of timber; some were taken while basking in the sun of small glades in the forest; others were found hiding under fallen tree trunks." Wright and Bishop (1915: 169) point out that the species prefers the drier parts of the Okefinokee Swamp. Corrington (1929: 74) states, "taken in the coastal plain only. The principal collections were from marshy situations, less often in drier woods." The number of somewhat conflicting statements concerning the habitat of this species could be multiplied by citing additional authors. Mr. Roger Conant informs me that captive specimens of the Chain Snake spend much of their time lying in their water pans. Mr. W. Stuart Cramer once collected a specimen in the water in a brackish swamp at Heislerville, near Cape May, Cumberland Co., N. J., which disgorged a large *Natrix sipedon sipedon*. The published statements of Wright and Bishop, and Corrington, and the experiences of Conant and Cramer indicate that this species is more moisture-loving than Ditmars' statement indicates.

The preponderance of records along rivers, coupled with the almost complete absence of records in upland situations at any considerable

distance from streams, is additional evidence that *L. g. getulus* is limited to the vicinity of moderate to large-sized bodies of water which provide broad valleys, marshes, or moderately open and gently sloping terrain. Turtles flourish under identical conditions, and the extreme fondness of the Chain Snake for turtle eggs (Wright and Bishop, 1915: 170) lends support to the view that the snake is normally associated with turtles and is relatively common in habitats which turtles select for egg-laying. Although the species is practically restricted to the type of environment outlined above, the citations indicate that it frequently selects the drier situations of this environment. In the northern half of its range, at least, the Chain Snake may be said to occur in, or within a daily range of, fluvial habitats within the Piedmont and Coastal Plain Provinces. I doubt whether the species may properly be considered an inhabitant of the Atlantic Coast littoral, for the many coastal records are all located near river mouths. Beyond the Blue Ridge, within the Valley and Ridge Province, it is to be expected only in the valleys of Atlantic drainage streams which have provided water gaps for convenient penetration of the mountains. I do not believe that stream capture at the headwaters of mountain streams has ever affected the distribution of this form.

It should be noted that Stejneger and Barbour in the third edition of the Check List (1933: 108) add West Virginia to the range of *Lampropeltis getulus nigra* (Yarrow). I am not aware of the evidence upon which this range extension is based, but the occurrence of the form at Hanging Rock, Ohio (Blanchard, 1921: 48) which is only a few miles down the Ohio River from Huntingdon, W. Va., has led me to expect it in West Virginia. The very region—along the Kentucky border—where it should be collected is zoologically the least known area of West Virginia. Residents along the Big Sandy and Guyandot Rivers should be encouraged to search for this interesting snake.

#### SUMMARY

1. *Lampropeltis getulus getulus* is recorded from West Virginia for the first time on the basis of one existing specimen, and two additional records of specimens which were not preserved.
2. The former published records for Pennsylvania are considered insufficient to establish the occurrence of the species in the state, but

it is admitted to the state fauna on the basis of a single Lancaster County specimen which was captured, photographed, and released.

3. The habitat, and the distribution of the Chain Snake in the northern part of its range are discussed. It is concluded that the species inhabits large valleys of Atlantic drainage streams, and that it has penetrated west of the Blue Ridge only where water gaps have provided entry to the Valley and Ridge Province.

4. The need of specimens of *Lampropeltis getulus nigra* from West Virginia is mentioned, and the area where these may be found is outlined.

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